

**FORM A**  
Board of Regents, State of Iowa

**REQUEST TO IMPLEMENT A NEW BACCALAUREATE,  
MASTERS, DOCTORAL, OR PROFESSIONAL DEGREE  
PROGRAM**

THE PURPOSE OF ACADEMIC PROGRAM PLANNING: Planning a new academic degree program provides an opportunity for a Regent university to demonstrate need and demand as well as the university's ability to offer a quality program that is not unnecessarily duplicative of other similar programs offered by colleges and universities in Iowa.

Institution: Iowa State University

CIP Discipline Specialty Title: \_\_\_\_\_

CIP Discipline Specialty Number (six digits): \_\_\_\_\_

Level: B  M  D  P

Title of Proposed Program: Bachelor of Science in Integrated Health Sciences

Degree Abbreviation (e.g., B.S., B.A., M.A., Ph.D.): B.S.

Mode(s) of Delivery (check all that apply): On-campus (face-to-face)  Off-campus (face-to-face)  Online  Hybrid  Other \_\_\_\_\_

Approximate date to establish degree: Month August Year 2025

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College that will administer new program: Liberal Arts and Sciences managing; CALS and CHS collaborating colleges

Please provide the following information (use additional pages as needed). Do not use acronyms without defining them.

**1. Describe the proposed new degree program, including the following:**

**A. A brief description of the program. If this is currently being offered as a track, provide justification for a standalone program.**

The first and only program of its kind in the State of Iowa, the proposed Integrated Health Sciences (IHS) program at Iowa State University (ISU) will be a pioneering initiative designed to prepare graduates for a broad spectrum of healthcare and public health careers, all while addressing the urgent challenges of the 21st-century health sciences landscape. An interdisciplinary endeavor, the IHS program fuses insights from life sciences, behavioral and social sciences, data science, and the humanities to provide a holistic view of healthcare and its societal impact. Five distinct IHS tracks have been developed (Figure 1), catering to specialized

areas of study: a.) the science of health and disease, b.) human health and nutrition, c.) data science and human studies, d.) public policy, ethics, communications and human health and e.) behavioral and mental health studies. Students are trained through a balance of rigorous, multidisciplinary academic coursework, track-specific specialized courses, hands-on learning experiences, and interprofessional collaborations, making them highly competitive candidates in the healthcare sector.

IHS is not merely another health sciences program but an innovative educational initiative designed to fill unmet needs in Iowa and the nation's healthcare landscape. Offering a multidisciplinary, and interdisciplinary, curriculum, IHS enables graduates to excel as holistic healthcare professionals who understand the biological, behavioral, environmental, and social determinants of health. The program's five tracks offer flexibility and adaptability, creating highly personalized educational experiences that can be tailored to a student's individual career goals. Moreover, IHS aims to establish partnerships with medical schools and other healthcare institutions for students who choose to seek advanced training, creating a mutually beneficial educational pipeline. IHS broadens the educational opportunities for aspiring healthcare professionals in Iowa and beyond, thereby enhancing healthcare access and quality.

#### **B. A statement of academic objectives;**

The Integrated Health Sciences (IHS) program at Iowa State University aims to provide a comprehensive, interdisciplinary education that prepares graduates for a broad range of careers in the health sciences and related fields. Drawing upon the expertise and educational philosophies of the College of Liberal Arts and Sciences (LAS), the College of Agriculture and Life Sciences (CALS), and the College of Human Sciences (CHS), the IHS program is designed to cultivate well-rounded, informed, and ethically responsible professionals. The overarching academic objectives are to develop graduates who can adapt and contribute meaningfully to the rapidly evolving landscape of healthcare, who understand the complex interplay of biological, psychological, and social factors affecting health, and who are committed to evidence-based solutions and community service. These objectives are captured in the following interdisciplinary academic outcomes developed for the program.

The IHS program is designed to meet an array of academic objectives that align with the healthcare sector's current and future needs. By fusing the strengths and priorities of three major colleges within Iowa State University, the IHS program has formulated program outcomes that set the stage for transformative education in healthcare. The program outcomes are as follows:

1. **Effective Communication:** Empower graduates to articulate health-related information professionally, adapting to diverse audiences through various media forms.
2. **Critical Thinking and Problem Solving:** Equip graduates with the skills to dissect complex health issues, employing evidence-based approaches and statistical reasoning to propose effective solutions.

3. Cultural Competence and Global Citizenship: Foster sensitivity towards diverse populations and advocate for health equity and social justice on both local and global scales.
4. Information Literacy: Instruct graduates to adeptly locate, evaluate, and utilize credible health-related sources for informed decision-making and practice.
5. Ethical Conduct: Instill a foundation of ethical principles to guide graduates in decision-making, research, and healthcare practices, underscoring accountability and integrity.
6. Leadership and Teamwork: Cultivate leadership and collaborative skills, preparing graduates to be valuable contributors to interdisciplinary healthcare teams.
7. Entrepreneurial Spirit and Creativity: Inspire graduates to think entrepreneurially, developing innovative health initiatives, products, or services that address gaps in healthcare and improve outcomes.
8. Environmental Awareness: Highlight the interconnectedness between human health and the environment, enabling graduates to identify and address relevant environmental factors.
9. Understanding of Socioeconomic Impacts: Provide a nuanced understanding of how socioeconomic factors affect human health, along with strategies to minimize disparities and promote health equity.
10. Psychological and Behavioral Considerations: Educate graduates on the role of psychological and behavioral factors in human health and appropriate evidence-based interventions.
11. Fundamental Health Science Knowledge: Establish a foundational understanding of human biology, genetics, and nutrition and their role in health and disease.
12. Scientific Methodology: Imbue graduates with a thorough comprehension of the scientific method, particularly its application in health sciences research, from study design to interpretation.

**C. What the need for the program is and how the need for the program was determined;**

The necessity for an Integrated Health Sciences (IHS) program was identified through a multi-pronged approach, combining labor market analysis, stakeholder interviews, and consultations with industry professionals. The analysis led to conclusions about educational gaps in our state and emphasized the large size of the market for health sciences undergraduate programs.

1. **Labor Market Analysis:** According to data from the Bureau of Labor Statistics, healthcare occupations are projected to grow by 15% between 2021-2031, much faster than the average for all occupations. In addition, Iowa Workforce Development (January 2023) reported healthcare professions projections ranging from 5.8% -2% annual growth for a

large range of common healthcare occupations. The need for the Integrated Health Sciences program at ISU is underscored by pressing healthcare challenges unique to the state of Iowa: according to the [2021 Iowa Physician Workforce Profile from the Association of American Medical Colleges \(AAMC\)](#), Iowa ranks 44th out of 50 states in healthcare provider-to-patient ratio, indicating a critical shortage of healthcare professionals. Additionally, the state faces an urgent need for workforce replenishment in healthcare sectors, [particularly in rural areas](#). These factors have escalated the demand for specialized training in healthcare and public health careers, making it imperative to expand educational opportunities in these disciplines. According to recent market analysis by Hanover Research, positions for medical and health services managers and community health workers should increase 21.6 % and 11.6 % in the Midwest region through 2032 respectively.

- 2. Stakeholder Interviews:** Preliminary interviews conducted among prospective students, current students in related fields, and parents of students in pre-health disciplines helped to structure the curriculum of this major. In follow-up interviews, respondents overwhelmingly indicated strong support for the IHS program. Over 90% of respondents expressed an interest in enrolling in the IHS program or were highly supportive of the IHS program's novel structure. Students and parents alike appreciated the program's academic flexibility and emphasis on personalization.
- 3. Industry Consultations:** Discussions with local healthcare providers at Mary Greeley Medical Center, Story County Medical Center, Broadlawns Medical Center, Guthrie County Hospital and Mahaska Health Partnership as well as regional employers in the health care industry such as Iowa Department of Health and Human Services, UCS healthcare, and Avera Health. have corroborated the need for an academic program that creates a pool of job candidates who are adept in a wide range of health sciences topics. Importantly, discussions emphasized the urgent need for healthcare workers capable of handling Iowa-specific challenges, such as rural healthcare and an aging population.
- 4. Educational Gaps:** A survey of existing degree programs in the state revealed that no program in the State of Iowa offers a highly similar fully integrated, interdisciplinary approach to health sciences at the undergraduate level. Existing programs focus on traditional science-loaded pre-medical tracks, specialized training in pre-health professional fields, or offer training limited to public health. The need for medical school applicants to not only meet science pre-requisites, but to also master a discipline area the student is passionate about, and have a strong foundation in the humanities, social sciences, and communication is recognized by the American Medical Association. The highly personalized, flexible, and integrated IHS curriculum, which generally incorporates the specializations encountered in other university's majors, may be of interest to students exploring a pre-medical track, but it will not penalize students for deciding to take a different pathway to their healthcare career. Students with highly diverse healthcare interests and career goals will all find an academic home in the IHS major, encouraging an expedient pathway to healthcare careers.
- 5. Potential for Complementary Educational Programs in Iowa:** The robust demand for healthcare professionals in Iowa and the US suggests there is ample room for additional, complementary educational offerings. The [National Center of Education Statistics \(NCES\)](#)

has consistently ranked “health professions and related programs” as the second most popular university major, making up 17% of degree conferrals in the country. The popularity of the major has been steadily on the rise since 2010, with significant traction since 2019.

In conclusion, the data and consultations strongly argue for the timeliness and necessity of an Integrated Health Sciences program in the State of Iowa. Through this program, we are not only serving the educational needs of our students but also directly contributing to the betterment of healthcare access and delivery across the state.

**D. The relationship of the proposed new program to the institutional mission and how the program fits into the institution’s and college’s strategic plan;**

*ISU Mission:* The IHS program is a practical realization of Iowa State University's mission to create, share, and apply knowledge for the betterment of its students, the state of Iowa, and the world at large. With the collaborative efforts of three ISU colleges— the College of Liberal Arts and Sciences, College of Agriculture and Life Sciences, and the College of Human Sciences —the IHS program epitomizes the university's commitment to innovation and interdisciplinary education. Each of the colleges has contributed to the formulation of the IHS program's outcomes, making it a holistic and comprehensive educational experience. By serving as an incubator for innovation in healthcare, the IHS major prepares students to become not just practitioners but leaders in their respective fields. The program achieves its goals through a focus on experiential learning, community engagement, and evidence-based practices, all underpinned by scientific inquiry. As such, the IHS major directly supports the overarching goals of Iowa State University’s strategic plan, contributing to the betterment of healthcare access and delivery locally, statewide, and beyond.

*ISU Strategic Plan:* The interdisciplinary undergraduate major in Integrated Health Sciences is well-aligned with Iowa State University's strategic plan, as it prepares students to become innovative and engaged leaders in the healthcare field. The IHS major provides students with a rich and diverse educational experience. The program offers opportunities for experiential learning, research, and community engagement, which enhances the overall education experience for students.

Innovation is a key component of the strategic plan, and the IHS major encourages interdisciplinary and innovative approaches to healthcare. Students in this major learn to apply knowledge from multiple fields, including biology, chemistry, genetics, nutrition, health and wellness, statistics, and social sciences, to address complex health challenges. By encouraging collaboration, creative problem-solving, and offering a wide variety of student research, innovation, & social entrepreneurship opportunities through the Departments and the ISU Student Innovation Center, the program fosters an innovative mindset among students.

Community engagement is another aspect of the strategic plan, and the IHS major prepares students to engage with communities and address health disparities. Students learn the social

determinants of health and the impact of community-based interventions on health outcomes. Students will have opportunities to participate in service learning, internships, and research projects that involve working with local communities (e.g., rural healthcare or disability services communities).

Finally, the knowledge and discovery aspect of the strategic plan is reflected in the IHS major through its emphasis on evidence-based practices and scientific inquiry. The program prepares students to apply critical thinking skills to health-related problems and to use scientific methods to evaluate the effectiveness of interventions. Overall, the program's focus on innovation, engagement, knowledge and discovery aligns with the overarching vision of the strategic plan, which is to create, share, and apply knowledge to make the world a better place.

**E. The relationship of the proposed new program to other existing programs at the institution; describe how the proposed program will enhance other programs at the university. Will the proposed program duplicate existing programs at the university?**

The proposed interdisciplinary Integrated Health Sciences (IHS) major at Iowa State University complements but does not duplicate existing programs in the biological and health sciences. While ISU does offer traditional pre-health majors such as Biology, Biochemistry, Psychology, Genetics, Nutritional Science, and Kinesiology and Health, The Integrated Health Sciences IHS program occupies a unique educational space that complements these existing offerings. This proposed major is unique in its focus on health and wellness from an interdisciplinary perspective to uniquely prepare students for a variety of health-related careers. For example, unlike the traditional pre-health majors, IHS offers a well-rounded curriculum that encompasses life-sciences, health and wellness as well as social sciences, humanities and data science. This interdisciplinary approach provides students with a rich and nuanced understanding of health-related issues, including biological, behavioral, environmental, and social determinants of health and healthcare equity. For example, IHS students will be well prepared to understand the complexities of rural healthcare, which comprises both a high importance and high needs subset of the healthcare sector in our state. IHS students will also obtain the data science skills necessary to critically evaluate programs addressing these complexities. As a result, IHS graduates will be uniquely positioned to become industry leaders who can address complex healthcare challenges from multiple perspectives. The addition of the IHS major will not only broaden the scope of health science education at ISU but also enrich other programs by encouraging interdisciplinary collaboration and cross-disciplinary research opportunities for both faculty and students.

**F. Special features or conditions that make the institution a desirable, unique, or appropriate place to initiate such a degree program.**

Iowa State University is exceptionally well-suited to host the new Integrated Health Sciences program, thanks in part to its diverse academic offerings that already span over 100 undergraduate majors. Its strength in science-based programs, as exemplified by highly ranked graduate offerings in engineering and veterinary medicine, ensures a robust foundation for the IHS major. As a land-grant institution, ISU has a legacy of community-focused research, an ethos

that will translate into the IHS curriculum. The presence of world class research and development facilities like the ISU Student Innovation Center further underscore the university's capacity for impactful scientific inquiry and innovative problem solving.

The large ISU student body suggests a ready pool of potential enrollees, while the vibrant campus life offers many opportunities for the interdisciplinary collaborations central to IHS objectives. Additionally, ISU's proximity to Des Moines allows for valuable partnerships with healthcare institutions, giving students a real-world learning environment.

The university's commitment to student success is manifested in initiatives like 'Soar in 4,' which aligns well with the fast-paced needs of the healthcare field. Finally, ISU's affordability will make the program accessible to a broader demographic, contributing to a diverse healthcare workforce. Overall, ISU's unique features make it not only a feasible host for the IHS program but also a highly beneficial one for both the university and the surrounding community.

**G. Describe the personnel, facilities, and equipment necessary to establish and maintain a high quality program. Include any reallocations from other programs or areas of the university.**

A dedicated recruitment and advising person at the University level to represent all three colleges involved in this interdisciplinary degree with administration by an interdepartmental committee with representation from all three colleges.

Most of the courses proposed in the IHS major are already developed and currently offered by different departments in each of the five tracks. Several new courses can mostly be developed by current faculty members in involved departments. If the enrollment reaches to 200-300 in 3-4 years as expected, additional faculty members are needed to cover the teaching (including experiential learning opportunities) and build research strengths in the IHS program. The need for new faculty members should be determined by the enrollment number in the tracks and workforce demand in specific areas.

**H. How does student demand for the proposed program justify its development? What are the anticipated sources of students to enroll in this new program?**

**Healthcare Professions:** [In the wake the pandemic, the demand for health and medical education is increasing.](#) The pandemic has changed the way we prioritize healthcare systems and has drawn critical attention to the need for a robust healthcare workforce. Rapid advancements in healthcare disciplinary areas demand the development of responsive educational programs capable of training our future practitioners. Despite the national trend of declining enrollment at higher education institutions, some health-focused programs have experienced higher than average applications in the last few years. The National Student Clearinghouse Research Center Term Enrollment Estimates Report for Spring 2022 showed undergraduate enrollment at 4-year institutions for Health Professions and Related Clinical Sciences held relatively steady throughout the pandemic despite steep enrollment declines

in almost all other disciplines. Health Sciences is one of the most in-demand majors at US undergraduate institutions with a nation-wide enrollment of 1,024,849 students ([https://nscresearchcenter.org/wp-content/uploads/CTEE\\_Report\\_Spring\\_2022.pdf](https://nscresearchcenter.org/wp-content/uploads/CTEE_Report_Spring_2022.pdf)).

During the IHS program development phase, a methodical series of interviews with prospective and current ISU students revealed an overwhelming interest in an interdisciplinary approach to health sciences education. Students expressed a desire for a program that not only serves as a robust foundation for those aiming for medical school but also accommodates a broader spectrum of interests such as health-related social sciences, data analytics, and humanities. Quantitative data affirming these qualitative insights reveal that over 90% of students interviewed explicitly cited the value of an integrated curriculum as a decisive factor for enrollment. Moreover, both students and parents highly valued the program's flexibility, particularly the ability to transition from a science-heavy 'pre-medical' track to other areas without sacrificing academic credits. This feature addresses a significant concern for student retention and graduation rates, aligning with university objectives for efficient time-to-degree metrics.

We feel our novel approach to integrated health studies will attract new students to Iowa State University from across the state of Iowa and surrounding regions. By offering a unique blend of scientific, social, and humanistic disciplines in one comprehensive program, we provide a differentiated academic offering not readily available in other institutions. This could serve as a major pull factor for Iowa State University, especially in light of Iowa's current healthcare provider shortages, as it prepares students for a wider range of careers within the healthcare sector.

Comparable programs: Our approach to integrated health studies is novel, but not unheard of. The Integrated Health Studies major at the University of Illinois Chicago (UIC) is similar to the proposed IHS major at ISU and offers a Bachelor of Science in Liberal Arts and Sciences, emphasizing an alternative and holistic approach to health science. The program, designed for students interested in a diverse range of health science careers, encourages interdisciplinary study, covering life sciences, physical sciences, social sciences, and humanities, to explore human health's complexity from genetics to societal levels ([UIC Integrated Health Studies](#)). UIC IHS graduates are prepared for a variety of career opportunities in healthcare, including health education, health innovation, patient education, community health, health administration, and health policy development. Additionally, the major prepares students for further graduate studies in fields such as public health, and health administration ([LAS at UIC](#)). [UIC Career Development services offers insight into the variety of internship opportunities and industries/career areas IHS majors transitioned into professionally.](#) The enrollment of UIC IHS program has grown from 40 from inaugural year (2017/2018) to nearly 600 in 2023 (<https://ihs.uic.edu/about/>).

The Integrated Health Studies (IHS) secondary major at Kansas State University offers a comprehensive interdisciplinary, liberal arts training designed to complement a primary major for students interested in pursuing careers in health and health-adjacent fields.



Graduates of the KSU IHS program have shared positive reflections on how the secondary major has broadened their understanding of healthcare, offering new perspectives and a more holistic view of healthcare practices([KSU Arts & Sciences](#)).

Our data projections based on Integrated Health Science degree programs suggest a potential increase in enrollment of 325 students over 7 years due to the program’s interdisciplinary nature and focus on both urban and rural healthcare needs. Additionally, the program’s flexibility and adaptability align with the growing trend among students for educational experiences that can be tailored to individual career goals, making it a compelling choice for a modern, evolving student body.

1. Estimate the number of majors and non-majors students that are projected to be enrolled the program during the first seven years of the program.

Program Year	One	Two	Three	Four	Five	Six	Seven
New Students	35	50	65	70	85	85	85
Total Students	35	85	150	220	270	305	325

These numbers are based on the average number of graduating students per year in established programs from a Hanover Research analysis of Integrated Health Science Degree Programs across the nation.

2. Describe the state and/or national workforce need and/or demand for graduates of the proposed program currently and in the foreseeable future (provide the sources of data used to estimate workforce need and demand).

**National need:** An analysis conducted by the de Beaumont Foundation and the Public Health National Center for Innovations in October 2021 found that state and local public health departments require the hiring of 80,000 additional full-time employees to establish a sufficient foundational workforce to deliver a minimum set of public health services to the nation. The analysis emphasizes the urgent need for increased staffing in the public health sector to address current and future public health challenges, such as the ongoing COVID-19 pandemic.<sup>2</sup>

The U.S. Bureau of Labor Statistics (2023) projects the overall employment in healthcare occupations will grow 13 percent from 2021 to 2031, which is much faster than the average for all occupations. The predicted increase will result in about 2 million new jobs over the next decade. In addition to new jobs from industry growth, the need to replace workers has recently increased. Overall, approximately 1.9 million annual openings, on average, are projected to come from growth and replacement needs in healthcare occupations.<sup>3</sup> Finally, while jobs in public health are diverse, job growth from 2019 to 2029

for medical and health services managers, which is associated with a bachelor's level degree in public health areas, is projected to be a robust 32%.<sup>4</sup>

**State of Iowa:** Iowa is generally low on the scale compared to other states for healthcare provider to patient ratio; thus, the state is high-needs regarding staffing and replenishment of the workforce. Iowa Workforce Development reports (January 2023) show healthcare professions areas are expected to experience high to moderate annual growth in Iowa, including a very large 5.8% annual increase for nurse practitioners, 3.7% annual growth for medical and health service managers, 3.5% growth for physician's assistants, and approximately 3% growth for home healthcare aides and medical assistants.<sup>5</sup> From April 2023-September 2023, 854 jobs were posted by employers in the region seeking candidates with bachelor's degrees in health sciences. The majority of these jobs are in clinical research coordination. Top employers include higher education, healthcare systems and state or city governments. Of particular interest, in demand skills for applicants include clinical research, public health and data analysis which are all unified in the IHS curriculum.

- 3. The dean's office in the academic college proposing the new program is required to contact the corresponding dean's offices at the other two Regents universities (if there is no corresponding college, consider related programs in other colleges or contact the Provost's office for guidance). In some cases, such as for an interdisciplinary program, more than one college at the other universities may need to be contacted. Please summarize how this cross-institutional outreach was completed:**

- a. Date that Form A was sent to dean's offices at the other two Regents universities.

Form A and a draft of the IHS curriculum were shared with the Dean of the College of Social & Behavioral Sciences and the Interim Dean of the College of Humanities, Arts & Sciences at the University of Northern Iowa on February 13, 2024 and with the University of Iowa's College of Liberal Arts and Sciences on January 12, 2024.

- b. Date and format (email, telephone, video, in-person) of discussions between the dean's offices, and names/titles of those who participated.

Associate Dean Slagell in the College of Liberal Arts and Sciences at Iowa State University discussed the proposal briefly with University of Iowa's Associate Dean Cornelia Lang in a virtual meeting on January 12<sup>th</sup> and further emails were exchanged. Dean Lang sent the attached letter on February 21 after carrying out consultations on her campus. Slagell exchanged email communication with Dean Bass and Interim Dean Cooley who provided the attached letter after consultations with various programs at the University of Northern Iowa.

- c. Summary of feedback received from the other two Regents universities, including any concerns raised. Where relevant, describe current or planned collaborations related to the program.

Letters from the dean's offices are attached to this proposal. Each university is keenly aware of the growing workforce need in the broadly defined health sector. Neither institution offers an Integrated Health Sciences major, this multi-track interdisciplinary degree has points of overlap with some of the courses, minors, and majors offered on their campuses, but neither expressed concern about duplication.

- d. Was the proposal modified to reflect these discussions? If so, describe.

No modifications to the proposal were needed as a result of these discussions. The LAS College Dean's office meets annually with the Dean's offices of the other Regent's institutions providing opportunities for ongoing discussion.

- 4. List other public and private institutions of higher education in Iowa currently operating programs similar to the proposed new degree program. (For comparison purposes, use a broad definitional framework, e.g., such identification should not be limited to programs with the same title, the same degree designation, having the same curriculum emphasis, or purporting to meet exactly the same needs as the proposed program.)**

**Other Health Science Degrees in Iowa:**

B.S. in Health Sciences at Drake University is likely the most similar degree program to IHS in Iowa, focusing on both science and business proficiency as a part of the healthcare curriculum. Students are required to declare an emphasis in entrepreneurship, business management, or accounting. This program seems more geared toward producing healthcare managers. On the other hand, the proposed IHS program integrates science, data science, and the humanities to provide students a comprehensive, integrated approach to all determinants that impact health care.

B.S. in Health Sciences at Mercy School of Health Sciences. This is a traditional pre-medical degree track, focusing on science/laboratory coursework.

Loras College B.S. in Health Sciences. A four-year degree for students interested in a range of health or pre-health studies. This program does not provide extensive coursework opportunities outside of traditional health science areas (e.g., social sciences, humanities).

Loras College 1-year post-baccalaureate pre-medical/health program. This is a non-traditional post-baccalaureate program that offers students a one-year concentration in health-related science studies to help graduates change career paths after receiving a primary degree.

If the same or similar program exists at another institution of higher education in Iowa (other than those Regent universities noted above), respond to the following questions:

As described in Sections E and F, IHS program we are developing is truly interdisciplinary and we have all needed expertise on campus to support its development. Since IHS program is quite different than the other programs listed above, we do not see a need for collaborations with the other institutions of higher education in Iowa at this time.

- a. Describe collaboration efforts with other institutions: NA
  - b. With what representatives of these programs has there been consultation in developing the program proposal? Provide a summary of the response of each institution consulted: NA
  - c. Has the possibility of an inter-institutional program or other cooperative effort been explored? NA
  - d. Are the other programs similar to the proposed program at comparable quality and cost? No
5. **If there are plans to offer the program off campus, online, or a blended modality, briefly describe these plans, including potential sites and possible methods of delivery instruction.** Will off-campus delivery require additional **HLC or other accreditor approval?**

The IHS undergraduate major will be offered as an on-site degree program with opportunities for taking already well-established online courses in the areas of health communication, human anatomy, human physiology, nutritional sciences, and more. Instructors for these online courses actively participate in the university's Center for Learning and Teaching (CELT), as well as Quality Matters (QM) online course training.

6. **Will the proposed program apply for programmatic accreditation? When?**

No

7. **For undergraduate programs: Will articulation agreements be developed for the proposed program? With whom?**

Des Moines University has expressed interest in articulation agreements with the proposed Integrated Health Science major at Iowa State University. One proposed articulation agreement would include guaranteed interviews or admission to the Doctor of Osteopathic Medicine program for a set number of Integrated Health Science majors who meet the minimum Des Moines University admissions criteria. This partnership will provide a significant opportunity for top pre-medical students who choose to study at Iowa State University.

A second proposed agreement would include an opportunity for Integrated Health Science majors to complete requirements for the online Master of Public Health program at Des Moines University concurrently with Integrated Health Science Bachelor Degree requirements. This partnership will provide the opportunity for students to complete advanced education and enter the Public Health field sooner than if students completed the degrees separately.

Both partnerships aim to provide potential interdisciplinary learning opportunities between Integrated Health Science, Medical, and Public Health students as well as address the healthcare shortage in the State of Iowa.

Conversations are on-going and dependent on the approval of the Integrated Health Science major.

**8. Describe any opportunities for experiential learning (e.g. internships, clinicals, research, community engagement/service learning).**

The foundations of the IHS major curriculum are bound by a commitment to the scholarship of teaching and learning, and, as such, to experiential learning as a pedagogical modality that offers unparalleled efficacy in facilitating deep understanding and application of knowledge. Early experiential learning opportunities in IHS will serve as a crucible for the cultivation of critical thinking, problem-solving abilities, interdisciplinary interactions, and professional competencies essential for the healthcare sector. Some examples include, but are not limited to:

- IHS first year learning community and experiential learning course hosted by the five disciplinary tracks to provide students with direction in their field of study. Novel early research opportunities through courses like BIOL 311X Genome Editing and the ISU Bionics Laboratory, where first year students can engage in a range of authentic biomedical research and prototype development experiences. Other courses include FSHN 492 (Research Concepts in Human Nutrition) and Pol S 344 (Public Policy) that provide students with hands-on experience of investigating health research and policy issues, applying policy analysis methods (such as stakeholder analysis, benefit-cost analysis) on real-world problems, and writing policy briefs and research papers. All of these courses are highly relevant to the future of healthcare.
- In track C, students have opportunities to participate in data science club, coding challenges and to work with faculty in data science on their research projects.
- In Track E, students in the Sociology of Health and Wellbeing course will complete an experiential learning project. Students will be presented with options to obtain hands-on experience through either: 1) job-shadowing, short-term internships, and field observations away from campus or 2) undergraduate research assignment completed on-campus using real-world data.
- A project-based capstone course led by a team of professionals representing the diverse areas of IHS research.

- Internship opportunities with regional businesses such as those with whom discussions have been initiated with above.

**9. From where will the financial resources to cover the costs for the proposed program come (list all that apply, e.g., department reallocation, college reallocation, grants, new to the university)?**

The initial cost for the development of the IHS program is supported by ISU Provost Office’s “Degrees of the Future” Initiative. The long-term cost of the program will be shared by involved colleges (LAS, CHS and CALS) through a shared governance.

**10. Include any additional information that justifies the development of this program.**

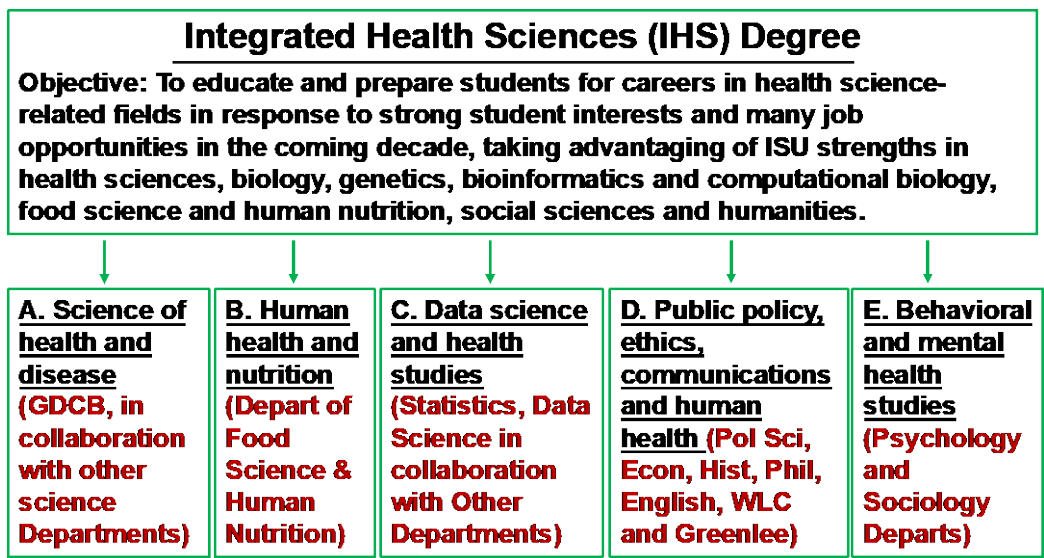
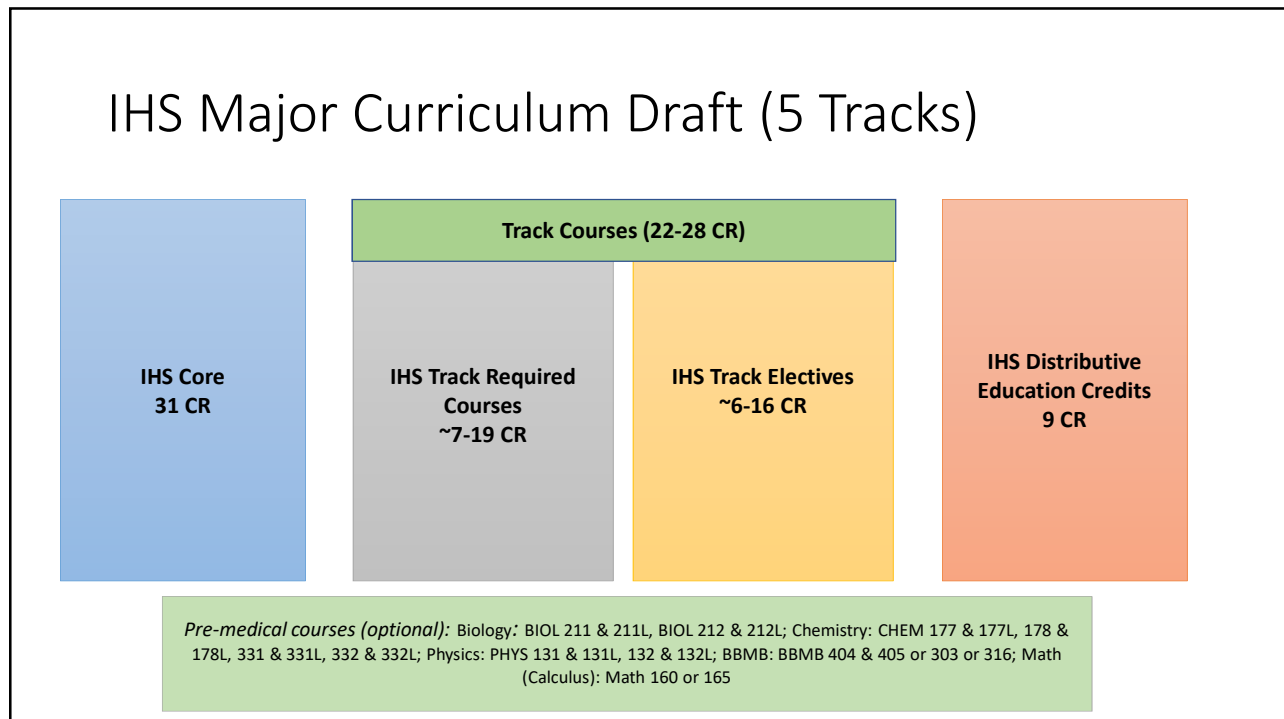
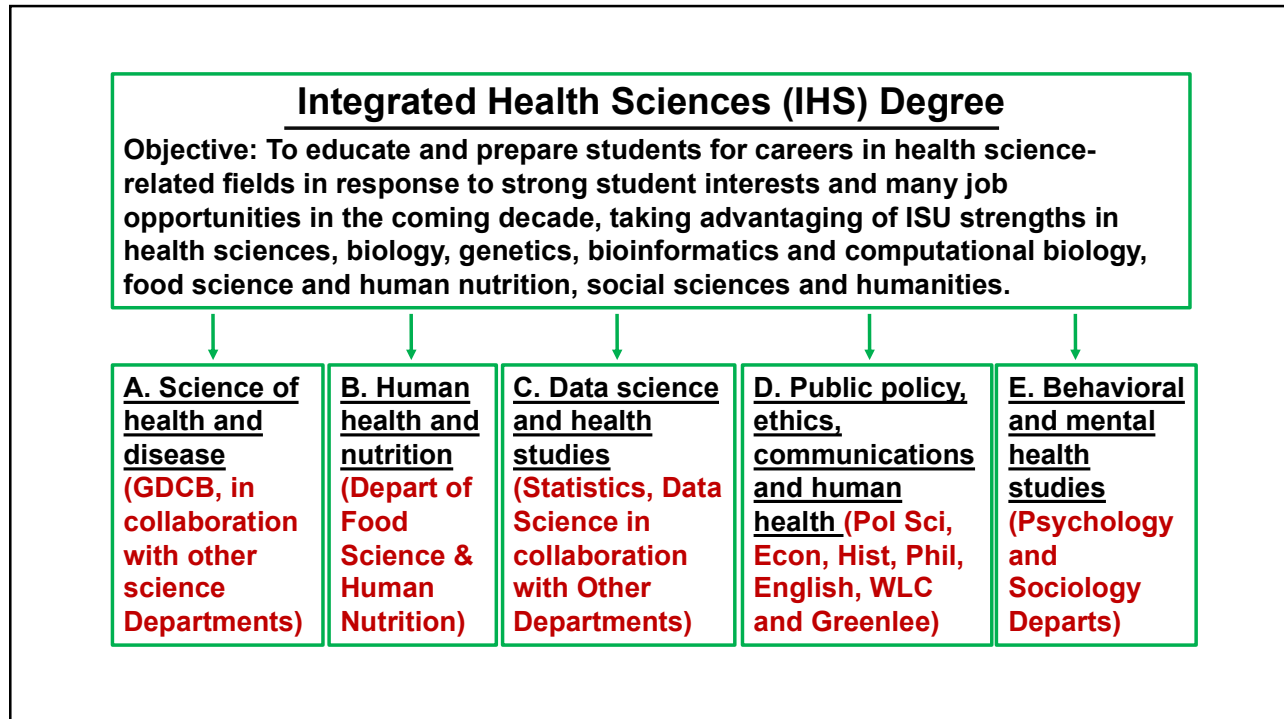


Figure 1: A logic model for IHS major.

## Appendix 1A: Curriculum Overview



## Track A: Science of Health and Disease, 72 Cr.

<p><b>IHS Core, 31 CR</b>  IHS 1XX Intro  SPCM 212 OR COMST 450b  PHIL 331  BIOL 255/L  BIOL 256/L  FSHN 167  STAT 101, 104 OR 201  POLS 337X  PSYCH 101 OR SOC 134  IHS 4XX</p>	<p style="text-align: center;"><b>Track A Core Courses (32 CR)</b></p> <table border="1"> <tr> <td style="background-color: #D3D3D3;"> <p><b>Track A Required (min. 23 CR)</b>  BIOL 313/L (4);  BIOL 211/L, BIOL 212/L (4);  <b>BIOL 350, BIOL 335, BMS 329 OR BMS 448;</b>  CHEM 163/L (5) OR  CHEM 177/L (5) &amp; CHEM 178/L (5);  BBMB 221 (3), BBMB 316 (3), or BBMB 404</p> </td> <td style="background-color: #FFD700;"> <p><b>Track A Electives (pick 9 CR)</b>  BIOL 311X, 314, 328, 335, 344, 350, 353, 402, 421, 423, 428, 436, 434;  <b>BMS 329, 438, 439, 448;</b>  Gen 340, 349, 409, 410; KIN 355, 358; Micro 302 302L, 310, 310L, 475</p> </td> </tr> </table>	<p><b>Track A Required (min. 23 CR)</b>  BIOL 313/L (4);  BIOL 211/L, BIOL 212/L (4);  <b>BIOL 350, BIOL 335, BMS 329 OR BMS 448;</b>  CHEM 163/L (5) OR  CHEM 177/L (5) &amp; CHEM 178/L (5);  BBMB 221 (3), BBMB 316 (3), or BBMB 404</p>	<p><b>Track A Electives (pick 9 CR)</b>  BIOL 311X, 314, 328, 335, 344, 350, 353, 402, 421, 423, 428, 436, 434;  <b>BMS 329, 438, 439, 448;</b>  Gen 340, 349, 409, 410; KIN 355, 358; Micro 302 302L, 310, 310L, 475</p>	<p style="text-align: center;"><b>IHS Distributive Education Credits 9 CR</b></p> <p style="text-align: center;">Pick 9 Cr. From Tracks B-E</p>
<p><b>Track A Required (min. 23 CR)</b>  BIOL 313/L (4);  BIOL 211/L, BIOL 212/L (4);  <b>BIOL 350, BIOL 335, BMS 329 OR BMS 448;</b>  CHEM 163/L (5) OR  CHEM 177/L (5) &amp; CHEM 178/L (5);  BBMB 221 (3), BBMB 316 (3), or BBMB 404</p>	<p><b>Track A Electives (pick 9 CR)</b>  BIOL 311X, 314, 328, 335, 344, 350, 353, 402, 421, 423, 428, 436, 434;  <b>BMS 329, 438, 439, 448;</b>  Gen 340, 349, 409, 410; KIN 355, 358; Micro 302 302L, 310, 310L, 475</p>			

*Pre-medical courses (optional):* Biology: BIOL 211 & 211L, BIOL 212 & 212L; Chemistry: CHEM 177 & 177L, 178 & 178L, 331 & 331L, 332 & 332L; Physics: PHYS 131 & 131L, 132 & 132L; BBMB: BBMB 404 & 405 or 303 or 316; Math (Calculus): Math 160 or 165

## Track B: Human Health and Nutrition, 65 Cr.

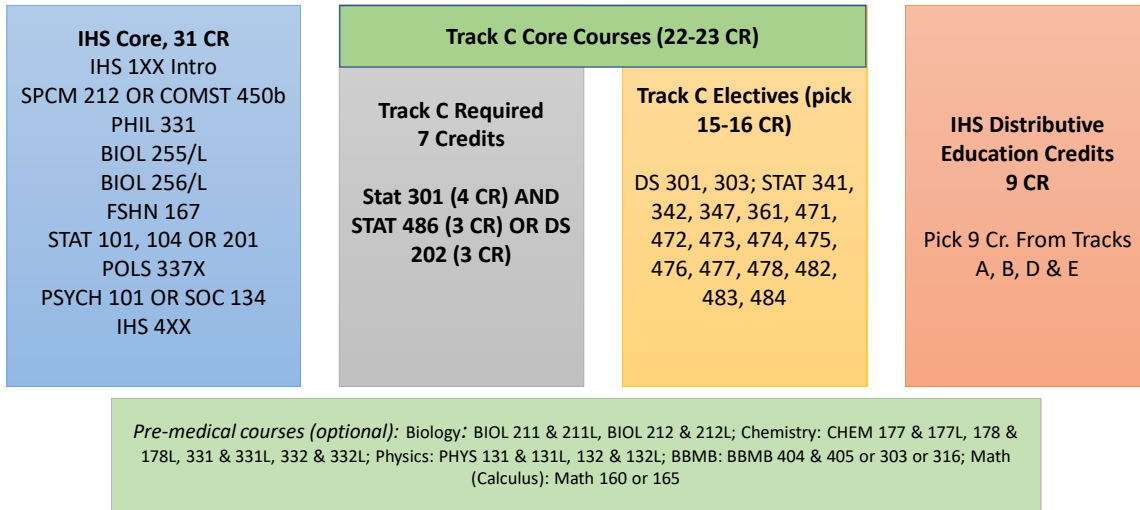
<p><b>IHS Core, 31 CR</b>  IHS 1XX Intro  SPCM 212 OR COMST 450b  PHIL 331  BIOL 255/L  BIOL 256/L  FSHN 167  STAT 101, 104 OR 201  POLS 337X  PSYCH 101 OR SOC 134  IHS 4XX</p>	<p style="text-align: center;"><b>Track B Core Courses (25 Cr.)</b></p> <table border="1"> <tr> <td style="background-color: #D3D3D3;"> <p><b>Required Courses 19 Cr.</b>  <i>Prereqs for FSHN Courses:</i>  CHEM 163/167 or 177;  BBMB course (221, 303, 316 or 404)    FSHN 265, 301, 467  KIN 358</p> </td> <td style="background-color: #FFD700;"> <p><b>Select 6 Cr. from</b>  FSHN 267X, 360, 361, 362, 364, 367, 461, 464, 492    KIN 472*, 473, 480  HS 464*  <small>*Tentative pending discussion with Instructors</small></p> </td> </tr> </table>	<p><b>Required Courses 19 Cr.</b>  <i>Prereqs for FSHN Courses:</i>  CHEM 163/167 or 177;  BBMB course (221, 303, 316 or 404)    FSHN 265, 301, 467  KIN 358</p>	<p><b>Select 6 Cr. from</b>  FSHN 267X, 360, 361, 362, 364, 367, 461, 464, 492    KIN 472*, 473, 480  HS 464*  <small>*Tentative pending discussion with Instructors</small></p>	<p style="text-align: center;"><b>IHS Distributive Education Credits 9 Cr.</b></p> <p style="text-align: center;">Pick 9 Cr. from Tracks A, C, D &amp; E</p>
<p><b>Required Courses 19 Cr.</b>  <i>Prereqs for FSHN Courses:</i>  CHEM 163/167 or 177;  BBMB course (221, 303, 316 or 404)    FSHN 265, 301, 467  KIN 358</p>	<p><b>Select 6 Cr. from</b>  FSHN 267X, 360, 361, 362, 364, 367, 461, 464, 492    KIN 472*, 473, 480  HS 464*  <small>*Tentative pending discussion with Instructors</small></p>			

*Pre-medical courses (optional):* Biology: BIOL 211 & 211L, BIOL 212 & 212L; Chemistry: CHEM 177 & 177L, 178 & 178L, 331 & 331L, 332 & 332L; Physics: PHYS 131 & 131L, 132 & 132L; BBMB: BBMB 404 & 405 or 303 or 316; Math (Calculus): Math 160 or 165

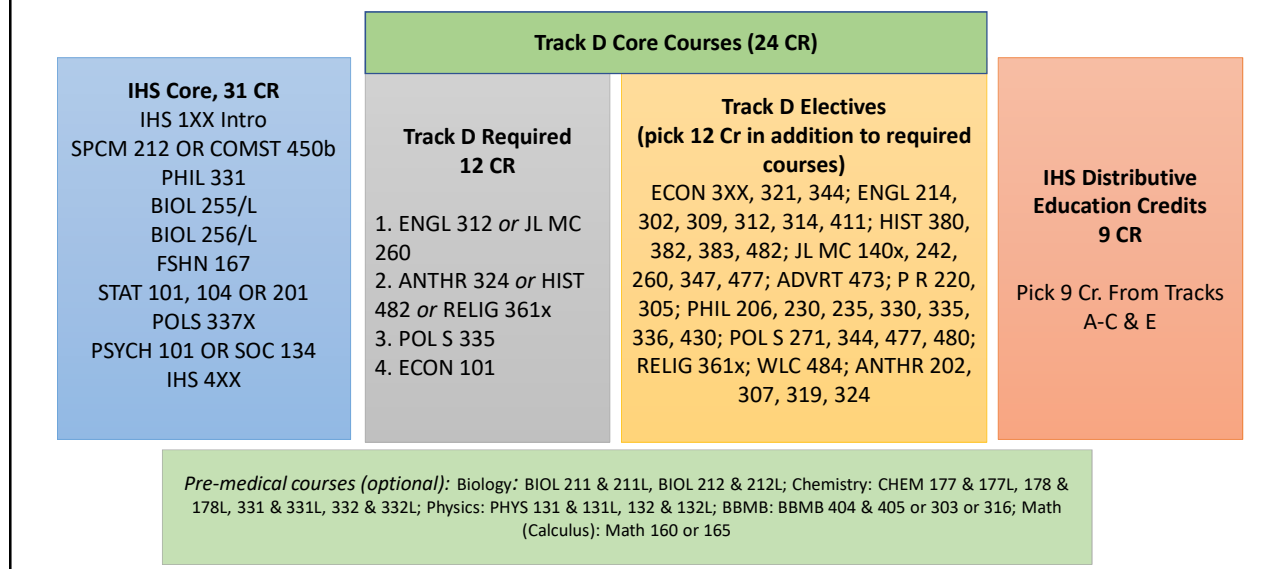
*Additional Studies for Health Career Opportunities:*  
Minor in Health Promotion, Kinesiology, International Studies, Foreign Language, Health Education, Health Coach Certificate, Bioinformatics & Computational Biology, Global Health, Healthcare Management



## Track C: Data Science & Health Studies = 62-63 Cr.



## Track D: Public Policy, Ethics, Communications and Human Health, 64 credits



## Track E: Behavioral & Mental Health Studies, 64 credits

<p><b>IHS Core, 31 CR</b>            IHS 1XX Intro            SPCM 212 OR COMST 450b            PHIL 331            BIOL 255/L            BIOL 256/L            FSHN 167            STAT 101, 104 OR 201            POLS 337X  <b>PSYCH 101 OR SOC 134</b>            IHS 4XX</p>	<p><b>Track E Core Courses (24 CR)</b></p>		<p><b>IHS Distributive            Education Credits            9 CR</b>             Pick 9 Cr. From Tracks            A-D</p>
	<p><b>Track E Required,            12 CR</b>   <i>Psych 230</i>  <i>Psych 280</i>  <i>SOC 480X*</i>   <i>Prereqs: Psych 101            and SOC 134</i></p>	<p><b>Track E Electives,            Pick 12 CR</b>             PSYCH 335, 422, 460,            315, 320, 485             SOC 219, 235, 334             CJ 240, 315, 340, 405</p>	
<p><i>Pre-medical courses (optional):</i> Biology: BIOL 211 &amp; 211L, BIOL 212 &amp; 212L; Chemistry: CHEM 177 &amp; 177L, 178 &amp; 178L, 331 &amp; 331L, 332 &amp; 332L; Physics: PHYS 131 &amp; 131L, 132 &amp; 132L; BBMB: BBMB 404 &amp; 405 or 303 or 316; Math (Calculus): Math 160 or 165</p>			

**Appendix 1B**  
**IHS Curriculum Detail**  
**IHS Core (31 Cr.)**

<b>Course #</b>	<b>Title</b>
IHS 1XX	Introduction to IHS
PHIL 331	Moral Problems in Medicine
BIOL 255/L	Fundamentals of Human Anatomy & Lab
BIOL 256/L	Fundamentals of Human Physiology & Lab
FSHN 167	Introductory Human Nutrition and Health
POLS 337X	Health Politics and Policy
IHS 4XX	IHS Capstone
Choose 1:	
PSYCH 101	Introduction to Psychology
SOC 134	Introduction to Sociology
Choose 1:	
SPCM 212	Fundamentals of Public Speaking
COMST 450b	Special Topics: Health Communication
Choose 1:	
STAT 101	Principles of Statistics
STAT 104	Introduction to Statistics
STAT 201	Introduction to Statistical Concepts & Methods

## TRACK A (72 Cr)

## Science of Health and Disease

## Required Courses (Min. 23 Cr.)

Course #	Title
BIOL 211	Principles of Biology I
BIOL 211L	Principles of Biology I Lab
BIOL 212	Principles of Biology II
BIOL 212L	Principles of Biology II Lab
BIOL 313	Principles of Genetics
BIOL 313L	Principles of Genetics Lab
Choose 1 chem group:	
CHEM 163	College Chemistry
CHEM 163L	Lab in College Chemistry
Or	
CHEM 177	General Chemistry I
CHEM 177L	General Chemistry I Lab
CHEM 178	General Chemistry II
CHEM 178L	General Chemistry II Lab
Choose 1:	
BBMB 221	Structure and Reactions in Biochemical Processes
BBMB 316	Principles of Biochemistry
<b>Choose 1 Advanced A&amp;P:</b>	
BIOL 350	Comprehensive Human Anatomy
BIOL 335	Principles of Human and Other Physiology
BMS 329	Anatomy and Physiology of Domestic Animals
BMS 448	Principles of Human Gross Anatomy

## Elective Courses (Choose 9 Cr.)

Course #	Title
BIOL 311X	Genome Editing and Engineering
BIOL 314	Principles of Molecular Cell Biology
BIOL 328	Molecular and Cellular Biology of Human Disease
BIOL 335	Principles of Human and Other Physiology
BIOL 344	Human Reproduction
BIOL 350	Comprehensive Human Anatomy
BIOL 353	Introductory Parasitology
BIOL 402	Introduction to Pathology
BIOL 421	Biological Principles of Aging
BIOL 423	Developmental Biology
BIOL 423 L	Developmental Biology Laboratory
BIOL 428	Cell Biology
BIOL 436	Neurobiology
BIOL 434	Endocrinology
GEN 340	Human Genetics
GEN 349	Genome Perspective in Biology
GEN 409	Molecular Genetics
GEN 410	Analytical Genetics
KIN 355	Biomechanics
KIN 358	Exercise Physiology
MICRO 302	Biology of Microorganisms
MICRO 310	Medical Microbiology
MICRO 475	Immunology
BMS 329	Anatomy and Physiology of Domestic Animals
BMS 438	Principles of Physiology
BMS 439	Principles of Pharmacology
BMS 448	Principles of Human Gross Anatomy

## Distributive Credits (9 Cr)

\*Pick 9 Cr from Tracks B-E

**TRACK B (65 Cr) Human Health and Nutrition****Required Courses (19 Cr)**

<b>Course #</b>	<b>Title</b>
FS HN 265	Nutrition for Active and Healthy Lifestyles
FS HN 301	Personalized Medicine: From Basic Science to Translational Impact
FS HN 467	Molecular Basis of Nutrition in Disease Etiology and Health Promotion
KIN 358	Exercise Physiology
Choose 1 Chem Group:	
CHEM 163	College Chemistry
CHEM 163 L	Lab in College Chemistry
Or	
CHEM 177	General Chemistry 1
CHEM 177L	General Chemistry 1 L
Choose 1:	
BBMB 221	Structure and Reactions in Biochemical Processes
BBMB 303	General Biochemistry
BBMB 316	Principles of Biochemistry
BBMB 404	Biochemistry I

**Elective Courses (Choose 6 Cr)**

<b>Course #</b>	<b>Title</b>
FS HN 267X	Clinical Perspectives on Human Nutrition and Health
FS HN 360	Advanced Nutrition and the Regulation of Metabolism in Health and Disease
FS HN 361	Nutrition and Health Assessment
FS HN 362	Nutrition and Health Throughout the Lifecycle
FS HN 364	Nutrition and Prevention of Chronic Disease
FS HN 367	Medical Terminology for Health Professionals
FS HN 461	Medical Nutrition and Disease I
FS HN 464	Medical Nutrition and Disease II
FS HN 492	Research Concepts in Human Nutrition
KIN 462	Medical Aspects of Exercise
KIN 473	Physical Dimensions of Aging
KIN 480	Functional Anatomy

**Distributive Credits (9 Cr)**

\*Pick 9 Cr from Tracks A,C-E

**TRACK C (62 Cr) Data Science and Health Studies**

Required Courses (7 Cr)		Elective Courses (Choose 15 Cr.)		Distributive Credits (9 Cr)
Course #	Title	Course #	Title	*Pick 9 Cr from Tracks A,B,D,E
STAT 301	Intermediate Statistical Concepts and Methods	DS 301	Applied Data Modeling and Predictive Analysis	
		DS 303	Concepts and Applications of Machine Learning	
Choose 1:		STAT 341	Introduction to the Theory of Probability and Statistics I	
STAT 486	Introduction to Statistical Computing	STAT 342	Introduction to the Theory of Probability and Statistics II	
DS 202	Data Acquisition and Exploratory Data Analysis	STAT 347	Probability and Statistical Theory for Data Science	
		STAT 361	Statistical Quality Assurance	
		STAT 471	Introduction to Experimental Design	
		STAT 472	Introduction to Time Series	
		STAT 473	Introduction to Survey Sampling	
		STAT 474	Introduction to Bayesian Data Analysis	
		STAT 475	Introduction to Multivariate Data Analysis	
		STAT 476	Introduction to Spatial Data Analysis	
		STAT 477	Introduction to Categorical Data Analysis	
		STAT 478	Introduction to Stochastic Process Models	
		STAT 482	Regression for Social and Behavioral Research	
		STAT 483	Empirical Methods for the Computational Sciences	
		STAT 484	Computer Processing of Scientific Data	

**TRACK D (64 Cr) Public Policy, Ethics, Communication & Human Health**

Required Courses (12 Cr)		Elective Courses (Choose 12 Cr)		Distributive Credits (9 Cr)
Course #	Title	Course #	Title	*Pick 9 Cr from Tracks A-C,E
POLS 335	Science, Technology, and Public Policy	ECON 3XX	Health Economics	
ECON 101	Principles of Microeconomics	ECON 321	Economics of Discrimination	
		ECON 344	Public Finance	
Choose 1:		ENGL 214	Introduction to Technical Communication	
ENGL 312	Communicating Science and Public Engagement	ENGL 302	Business Communication	
JL MC 260	Media Controversies in Science and Technology	ENGL 309	Proposal and Report Writing	
		ENGL 312	Communicating Science and Public Engagement	
Choose 1:		ENGL 314	Technical Communication	
ANTHR 324	Health and Native American Communities	ENGL 411	Technology, Rhetoric, and Professional Communication	
HIST 482	Birth, Death, Medicine, and Disease	HIST 380	History of Women in Science, Technology, and Medicine	
RELIG 361X	Religion, Health & Medicine	HIST 382	History and Philosophy of the Scientific Revolution	
		HIST 383	Technology, Public Science, and European Culture, 1715-Present	
		HIST 482	Birth, Death, Medicine, and Disease	
		JL MC 140X	Identity, Diversity and the Media	
		JL MC 242	Visual Principles for Mass Communicators	
		JL MC 260	Media Controversies in Science and Technology	
		JL MC 347	Science Communication	
		JL MC 477	Diversity in the Media	
		ADVRT 473	Social Media Strategy	
		P R 220	Principles of Public Relations	
		P R 305	Publicity Methods	
		PHIL 206	Introduction to Logic and Scientific Reasoning	
		PHIL 230	Moral Theory and Practice	
		PHIL 235	Ethical Issues in a Diverse Society	
		PHIL 330	Ethical Theory	
		PHIL 335	Social and Political Philosophy	
		PHIL 336	Bioethics and Biotechnology	
		PHIL 430	Value Theory	
		POL S 271	Public Organizations and Leadership	
		POL S 335	Science, Technology, and Public Policy	
		POL S 344	Public Policy	
		POL S 477	Government, Business, and Society	
		POL S 480	Ethics and Public Policy	
		RELIG 361X	Religion, Health and Medicine	
		WLC 484	Technology, Globalization and Culture	
		ANTHR 202	Human Origins	
		ANTHR 307	Biological Anthropology	
		ANTHR 319	Skeletal Biology	
		ANTHR 324	Health and Native American Communities	

**TRACK E (64 Cr)****Behavioral and Mental Health Studies****Required Courses (12 Cr)**

Course #	Title
PSYCH 230	Developmental Psychology
PSYCH 280	Social Psychology
SOC 480X	Special Topics in Sociology

## Choose 1:

PSYCH 101	Introduction to Psychology
SOC 134	Introduction to Sociology

**Elective Courses (Choose 12 Cr)**

Course #	Title
PSYCH 315	Drugs and Behavior
PSYCH 320	Sleep and Dreams
PSYCH 335	Child and Adolescent Psychopathology
PSYCH 422	Counseling Theory and Techniques
PSYCH 460	General Psychopathology
PSYCH 485	Health Psychology
SOC 219	Families and Intimate Relationships
SOC 235	Social Problems and American Values
SOC 334	Politics and Society
C J 240	Introduction to the U.S. Criminal Justice System
C J 315	Crime Victims and Victimization
C J 340	Deviant and Criminal Behavior
C J 405	Drugs and Crime

**Distributive Credits (9 Cr)**

\*Pick 9 Cr from Tracks A-D



**Appendix 2: Core Faculty and Departments Involved**

Name	Department	Track	IHS Role	Email
<b>Yanhai Yin</b>	GDCB	A	<b>Overall Lead, GDCB Chair</b>	<a href="mailto:yin@iastate.edu">yin@iastate.edu</a>
<b>Karri Haen Whitmer</b>	GDCB	A	<b>Track A Leader, CC Coordinator</b>	<a href="mailto:khaen@iastate.edu">khaen@iastate.edu</a>
Carly Manz	GDCB	A	IHS Curriculum Committee [CC]	<a href="mailto:clmanz@iastate.edu">clmanz@iastate.edu</a>
<b>Elizabeth McNeill</b>	FSHN	B	<b>Track B Leader</b>	<a href="mailto:emcneill@iastate.edu">emcneill@iastate.edu</a>
Terri Boylston	FSHN	B	IHS CC	<a href="mailto:tboylsto@iastate.edu">tboylsto@iastate.edu</a>
Sarah Miller	FSHN	B	IHS CC	<a href="mailto:millersb@iastate.edu">millersb@iastate.edu</a>
Lorraine Lanningham-Foster	FSHN	B	FSHN Chair	<a href="mailto:lmf@iastate.edu">lmf@iastate.edu</a>
<b>Dan Nettleton</b>	STAT	C	<b>Track C Leader, STAT Chair</b>	<a href="mailto:dnett@iastate.edu">dnett@iastate.edu</a>
Amy Froelich	STAT	C	IHS CC	<a href="mailto:amyf@iastate.edu">amyf@iastate.edu</a>
Heike Hofmann	STAT	C	IHS CC	<a href="mailto:hofmann@iastate.edu">hofmann@iastate.edu</a>
<b>Alex Tuckness</b>	POL-S	D	<b>Track D Leader, POL-S Chair</b>	<a href="mailto:tuckness@iastate.edu">tuckness@iastate.edu</a>
Kate Padgett Walsh	PH-RS	D	IHS CC	<a href="mailto:kpadwa@iastate.edu">kpadwa@iastate.edu</a>
Mack Shelley	POL-S	D	IHS CC	<a href="mailto:mshelley@iastate.edu">mshelley@iastate.edu</a>
Joshua Rosenbloom	ECON	D	ECON Chair	<a href="mailto:jrosenb@iastate.edu">jrosenb@iastate.edu</a>
Heimir Geirsson	PH-RS	D	PH-RS Chair	<a href="mailto:geirsson@iastate.edu">geirsson@iastate.edu</a>
Mike Bailey	WLC	D	WLC Chair	<a href="mailto:mdbailey@iastate.edu">mdbailey@iastate.edu</a>
Volker Hegelheimer	ENG	D	ENG Chair	<a href="mailto:volkerh@iastate.edu">volkerh@iastate.edu</a>
Simon Cordery	HIS	D	HIS Chair	<a href="mailto:scordery@iastate.edu">scordery@iastate.edu</a>
Michael Dahlstrom	GSJC	D	GSJC Director	<a href="mailto:mfd@iastate.edu">mfd@iastate.edu</a>
<b>Leana Bouffard</b>	SOC-CJ	E	<b>Track E Leader, SOC-CJ Chair</b>	<a href="mailto:lab17@iastate.edu">lab17@iastate.edu</a>
Robert Hessling	PSYCH	E	IHS CC	<a href="mailto:rmh@iastate.edu">rmh@iastate.edu</a>
Dan Krier	SOC-CJ	E	IHS CC	<a href="mailto:krier@iastate.edu">krier@iastate.edu</a>
Jonathan Kelly	PSYCH	E	PSYCH Chair	<a href="mailto:ionkelly@iastate.edu">ionkelly@iastate.edu</a>

### Appendix 3: Letters of Support

**IOWA STATE UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

Department of Genetics,  
Development and Cell Biology  
Nanovaccine Institute  
Iowa State University  
5205 Advanced Teach. & Research Bldg.  
2213 Pammel Dr.  
Ames, IA 50011-1101

March 1, 2024

To whom it may concern:

As director of the Biology and Genetics Programs at Iowa State University, I am writing to express my support for the proposed Integrated Health Sciences (IHS) major. This interdisciplinary program will significantly enhance the educational landscape of health sciences in Iowa, and it aligns well with the mission and strategic priorities of Iowa State University.

The IHS major was designed to meet the evolving needs of the healthcare industry. By integrating the core principles of life sciences, behavioral and social sciences, data science, humanities, and communication studies, the program offers a comprehensive approach to health sciences education currently absent in our state.

Support for the IHS major stems from its alignment with our own programs' academic objectives and the broader goals of ISU. The interdisciplinary nature of IHS complements the strengths of our existing Biology and Genetics programs, providing our students with additional pathways to careers in healthcare and research. Students will share many foundational courses, for example, Biology 212, Principles of Biology II, and BIOL 313, Principles of Genetics, in the Track A curriculum. Moreover, IHS enhances GDCB's existing educational offerings by introducing new health-related courses and providing students with information about various health-related disciplines, fostering a more well-rounded understanding of human health and disease.

The proposed program also addresses a critical need for healthcare professionals in Iowa, particularly in underserved rural areas. By preparing graduates with a versatile skill set, the IHS major will contribute to alleviating the state's healthcare provider shortage and improving public health outcomes. This aligns with our commitment to serving the state of Iowa and underscores the importance of the program to our community.

In conclusion, the Integrated Health Sciences major is a vital addition to Iowa State University's academic offerings. It will enrich the educational experience of our students and play a crucial role in addressing the healthcare needs of our state. I look forward to the opportunities it will provide for our students and the broader community.

Sincerely,

*Ronald Sakaguchi*

Don Sakaguchi, Ph.D.  
Morrill Professor  
Director, Biology and Genetics Undergraduate Programs  
Department of Genetics, Development, and Cell Biology (GDCB)  
Nanovaccine Institute  
Iowa State University  
[dssakagu@iastate.edu](mailto:dssakagu@iastate.edu)

March 5, 2024

**Statement to the Iowa State Community in support of the proposed Integrated Health Sciences, B.S.**

The LAS Curriculum Committee (LASCC) supports the goals of the new proposed Integrated Health Sciences (IHS), B.S. to diversify health-related training. The five proposed tracks introduce new integrations of life, social, and data sciences with communication and behavioral studies. The LASCC vote affirms our support for the flexible curricular design aimed at expanding the training base for future careers in the healthcare sector.

Our deliberations also highlighted the need for careful consideration of the subset of future IHS majors hoping to pursue postgraduate professional health degrees (e.g., medical, dental, and physician assistant schools). With the understanding that IHS was not proposed primarily as a pre-health professions major, a subset of IHS students may opt for pre-health preparations within an IHS track. The LASCC notes the importance of collaborative support structures for pre-health profession aspirants within the proposed IHS program, especially student recruitment and advising programs.

Several existing ISU majors offer programs tailored to the rigorous training needs of pre-health students. The breadth of curricular paths is valuable for student success in preparing for the demanding admissions expectations for postgraduate health profession schools. There is potential for misperception with a new prominent health major. We emphasize the importance for ISU recruitment and orientation programs to present a full portfolio of curricular pathways to prospective pre-health students.

Postgraduate health profession programs have challenging curricular requirements and admissions exams. The IHS proposal includes additional coursework recommendations for pre-health students. Coupling pre-health curriculum to IHS tracks presents advising challenges. Pre-health students will need to proactively opt into upper-level science courses starting in the first semester. Given the available breadth of IHS training, careful and attentive advising is critical to ensure pre-health profession students are reaching the necessary milestones on time. Navigating rigorous pre-requisites and planning for admissions exams will require an advising team that is working collaboratively with all allied pre-health majors.

Ultimately, the LASCC is enthusiastic about the expansion of healthcare training offered by the IHS proposal. The aforementioned notes focus only on the subset of future IHS students opting into pre-health profession preparation. The five IHS tracks offer many well-designed multidisciplinary training pathways for health-related careers.



Charles Kerton, Chair  
LAS Curriculum Committee

**Memo**

To: Faculty Senate Curriculum Committee  
From: Amy Slagell, Associate Dean, College of Liberal Arts and Sciences  
Date: March 26, 2024



This memo is both a statement of support for the interdisciplinary Integrated Health Sciences degree proposal and an opportunity to provide context about its development. As is evident from the list of faculty engaged in the development of this proposal, it represents a broad conversation among faculty with varied expertise. The development of this proposal, with some seed funding from the Degrees of the Future project, brought together both faculty from some areas with a traditional stake in preparing students for careers in health, such as genetics and nutrition, and from areas less frequently associated with health, such as data science, philosophy and political science. This kind of broad interdisciplinary program is a different way to think about a curriculum and the faculty who participated in its development are excited to add this degree to the list of options Iowa State University has in place that prepare students for the broad and growing workforce needs of the health sector.

The proposal is the result of collaboration across three colleges. LAS has been identified as the managing college for this major and we look forward to ongoing collaborations with our colleagues in the College of Human Sciences and the College of Agriculture and Life Sciences. As the managing college, LAS is bringing the proposal forward having gone through our normal curricular approval process. As noted on the voting record attached to the proposal, the proposal was reviewed by the LAS Curriculum Committee and approved with a 9-0 vote. The proposal then went to the LAS College Representative Assembly where it was approved with a 21-2 vote. Our partner colleges followed different practices. The College of Human Sciences Curriculum Committee, with representatives from FSHN, AESHM, SOE, HDFS, and KIN, approved the proposal 6-0; the College of Human Sciences also held a whole faculty vote that approved the proposal with a vote of 67-15, with 82 faculty not voting. The College of Agriculture and Life Sciences Curriculum Committee decided that since LAS was the managing college for the proposal that they would rely on the LAS process and not hold college votes.

The College of Liberal Arts and Sciences is happy to support this interdisciplinary faculty proposal. Iowa State has health-related expertise across many departments and this proposal adds a new pathway to bring students interested in health-related careers to Iowa State University. The faculty proposers are committed to supporting the success of these students as they prepare for a broad spectrum of healthcare and public health careers.



## College of Liberal Arts and Sciences

Undergraduate Programs (CLAS UP)

University of Iowa

120 Schaeffer Hall

Iowa City, Iowa 52242-1409

Phone: 319-335-2633 | Fax: 319-335-3192

Email: [clas-undergrad@uiowa.edu](mailto:clas-undergrad@uiowa.edu)

Web: [clas.uiowa.edu/students](http://clas.uiowa.edu/students)

February 20, 2024

Dr. Amy Slagell  
Associate Dean for Associate Dean for Academic Programs  
College of Liberal Arts and Sciences  
Iowa State University

Dear Dean Slagell,

Thank you for sharing the proposal for the new degree in Integrated Health Sciences, which is a collaboration between the College of Liberal Arts and Sciences, the College of Agriculture and Life Sciences, and the College of Human Sciences at Iowa State University. The proposed curriculum is impressive in its scope and with opportunities for students to prepare for a wide variety of health science related careers by selecting from one of the six tracks (A-E).

I have had the opportunity to consult with faculty leadership in the Department of Health and Human Physiology here in the College of Liberal Arts and Sciences at University of Iowa. As you may know, this department offers six different undergraduate degree programs (Human Physiology, Exercise Science, Health Promotion, Health Studies, Therapeutic Recreation, and Sport and Recreation Management). I also reviewed curriculum from the Department of Biology, Psychology and Sociology.

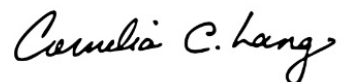
Faculty in the Department of Health and Human Physiology (HHP) find that the proposed Integrated Health Sciences (IHS) curriculum provides a lot of flexibility for students looking for careers in healthcare from pre-med to public health policy to community and behavioral health. In terms of curricular overlap with the programs in HHP, the HIS core curriculum includes two Anatomy and Physiology courses and several Kinesiology electives. Beyond that, the various tracks have some overlap and synergy with programs in HHP, but also some very clear distinctions.

IHS Track A (Science of Health and Disease) has some similarities to the Department of Biology's Biomedical Sciences degree program (a selective admissions program here in CLAS). Track B in the IHS program is Human Health and Nutrition; while HHP offers a few Kinesiology and Nutrition elective courses that are similar to courses in this program of study, the department in CLAS does not offer a nutrition degree program. HHP does offer a Lifestyle Medicine minor, which focuses on therapeutic lifestyle interventions to prevent and treat chronic conditions such as cardiovascular diseases, type 2 diabetes, and obesity. In addition, CLAS offers a pre-professional designation of "pre-dietetics interest" to ensure the basic pre-requisites for a nutrition graduate program are taken. However, there is no significant duplication with Track B and any of the HHP programs of study.

Tracks C (Data Science/Health Studies), D (Public Policy, Ethics and Communications), and E (Behavioral and Mental Health) of the proposed HIS curriculum do not have significant overlap with the programs of study offered in HHP, and have some synergies with programs of study offered by our Departments of Psychology, Sociology, and Statistics and Actuarial Sciences.

In summary, the proposed study of Integrated Health Sciences at Iowa State University appears to build on strength across several colleges and will provide important and relevant options for undergraduate students who are interested in pursuing this area of study. We wish the colleges well in getting this new program launched.

Sincerely,

A handwritten signature in cursive script that reads "Cornelia C. Lang".

Cornelia C. Lang (she/her/hers)  
Associate Dean for Undergraduate Education  
Professor of Physics and Astronomy

March 4, 2024

Amy Slagell  
Associate Dean for Academic Programs  
College of Liberal Arts and Sciences  
202 Catt Hall  
Iowa State University  
Ames, IA 50011-4009

Dear Amy,

Thank you for sharing the plans for the new Integrated Health Sciences Major. While the proposed major and its tracks do represent some overlap with majors, minors and certificates offered at the University of Northern Iowa, we recognize the need to support more educational pathways to support the health related workforces needs within the state. As such, we do not have any concerns at this time.

Sincerely,

*Brenda L. Bass*

Brenda L. Bass, Dean  
College of Social & Behavioral Sciences  
School of Health & Human Sciences

*Jennifer Cooley*

Jennifer Cooley, Interim Dean  
College of Humanities, Arts & Sciences



April 8, 2024

**Statement in Support of the proposed Integrated Health Sciences, B.S.**

As Associate Dean for Academic Innovation in the College of Agriculture and Life Sciences, I am writing to provide my support for the proposed Integrated Health Sciences major. This new interdisciplinary program will help meet student demand for programs that provide pathways into a broad array of health careers. It will also help address immediate and growing workforce needs across the private, public, and non-profit health care sectors both here in Iowa and across the nation.

The proposed degree includes five interdisciplinary tracks offering students both traditional and novel health career pathways. These tracks are organized so that students can easily tailor their education to align with their interests, from a data science career related to human nutrition to a public policy career related to mental health.

This proposal developed out of the Degrees of the Future initiative and as a collaboration between LAS, CHS, and CALS. Throughout this process, faculty leading this effort have engaged broadly with relevant faculty and related programs, including in CALS, inviting input into the proposal, the individual tracks, and the selection of courses. The three colleges have agreed to jointly manage the program going forward, with LAS as the lead college.

In sum, CALS enthusiastically supports this proposal and welcomes the opportunity to be involved in managing it.



Carmen Bain  
Associate Dean for Academic Innovation  
College of Agriculture and Life Sciences

April 22, 2024

Statement in Support of the proposed Integrated Health Sciences, B.S.

As Associate Dean for Undergraduate Academic Affairs in the College of Human Sciences (CHS), and on behalf of Dean Laura Jolly, I write this letter of support for the proposed Integrated Health Sciences major. I have worked closely with the associated CHS faculty members as they collaborated with colleagues from the Colleges of Liberal Arts and Sciences and Agriculture and Life Sciences in developing this new interdisciplinary program.

The proposed degree, and its five interdisciplinary options, will meet students' growing demand for health-related education. The proposed curriculum draws from existing faculty expertise in LAS, CHS, and CALS and will strengthen our health-related offerings.

As Dr. Amy Slagell notes in her letter, the College of Human Sciences curriculum committee reviewed this proposal and supported it unanimously. The proposal was also forwarded to a vote of the entire CHS faculty and received strong support. In sum, the College of Human Sciences enthusiastically supports this proposal and welcomes the opportunity to be involved in delivering this curriculum.

Sincerely,



Robert D. Reason, Ph.D.  
Professor of Education  
Student Affairs and Higher Education  
Iowa State University

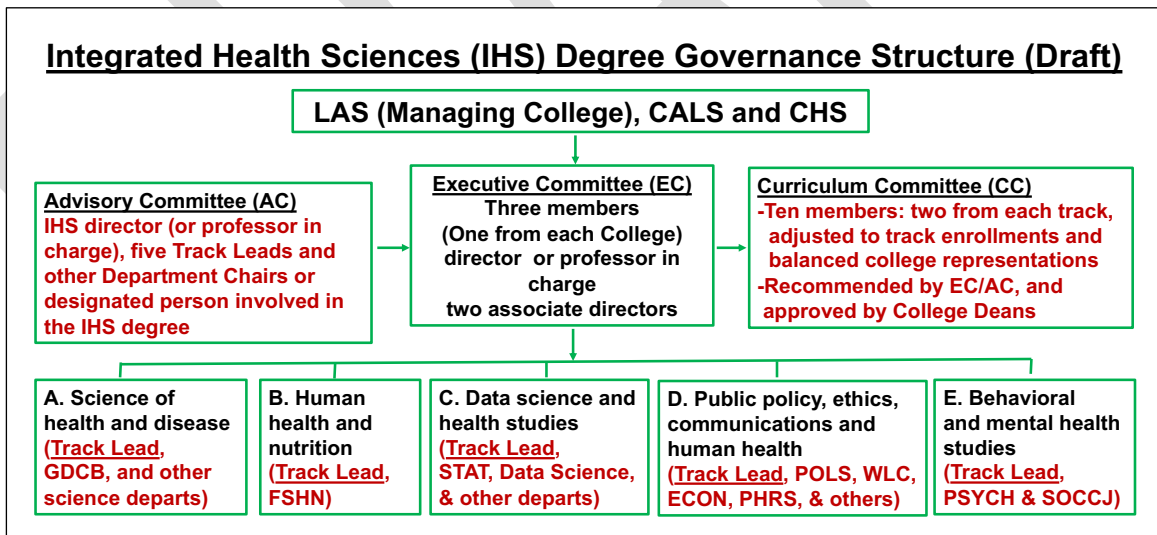
## Integrated Health Sciences (IHS) Governance Document (Draft)

### I. Mission Statement:

Human Health is of the highest importance to our society. In response to increasing demands for healthcare and socially relevant health sciences education, we propose to develop an Integrated Health Sciences (IHS) Major at Iowa State University (ISU). The proposed IHS program is designed to prepare graduates for a broad spectrum of healthcare and public health careers, all while addressing the urgent challenges of the 21st-century health sciences landscape. An interdisciplinary endeavor, the IHS program fuses insights from life sciences, behavioral and social sciences, data science, and the humanities to provide a holistic view of healthcare and its societal impact.

### II. IHS Tracks and Governance Structure

Five distinct IHS tracks have been proposed (see Figure), catering to specialized areas of study: a.) the science of health and disease, b.) human health and nutrition, c.) data science and health studies, d.) public policy, ethics, communications and human health e.) behavioral and mental health studies. Students will be trained through a balance of rigorous, multidisciplinary academic coursework, track-specific specialized courses, hands-on learning experiences, and interprofessional collaborations, making them highly competitive candidates in the healthcare sector. The IHS major governing body includes Executive Committee (EC), Curriculum Committee (CC) and Advisory Committee (AC) with the composition, appointments and responsibilities described below (Figure).



### III. HS Executive Committee (EC) and the responsibilities

1. The EC is composed of three members, a director and two associate directors appointed by the managing college in consultation with the collaborating colleges. Each college should have at least one representative on the EC.
2. The responsibilities of EC/Director:
  - a. Decides the direction of the IHS program

- b. Responsible for operation of the program including student advising, recruitment and coordinate teaching of IHS classes;
- c. Meet regularly with the IHS academic advisor(s).
- d. Communicates between all involved colleges and IHS
- e. Appoints and supervises curriculum committee
- f. Communicates with Advisory Committee to make sure all IHS courses are properly staffed and offered
- g. The Director and EC members serve three-year term, which can be renewed

**IV. IHS Curriculum Committee (CC) and the responsibilities**

1. The Curriculum Committee is initially composed of ten members with two from each of the five tracks, which shall be adjusted according to student enrollment in each track.
2. The EC appoints CC members in consultation with the Advisory Committee. The CC members shall be approved by the College Deans
3. Each involved College shall have at least two representatives in the Curriculum Committee
4. The Curriculum committee members serve three-year terms and can be renewed
5. The Curriculum Chair responsibilities
  - a. serves on the EC, communicates with IHS director and EC on curricular matters;
  - b. ensures that the committee is fully staffed based on established committee appointment processes;
  - c. calls meetings with committee members to discuss and vote on curricular matters, which shall require a quorum, consisting of a simple majority of voting members.
6. The Curriculum Committee member responsibilities
  - a. gather feedback from relevant department chair(s) the curriculum committee members represent to inform committee discussions;
  - b. discuss and vote on initial curriculum and all subsequent proposals for curricular change;
  - c. ensure that appropriate college curriculum committees and other appropriate individuals are apprised of the discussion and made aware of decisions made by the committee.

**V. IHS Advisory Committee (AC) and the responsibilities**

1. The Advisory Committee is composed of the IHS director, Five Track Leads and department Chairs (or designated person by the chair) involved in the IHS Degree
2. The responsibilities of the Advisory Committee:
  - a. provide advice to the director and EC on the direction of IHS Program;
  - b. Staff courses required for IHS Degree;
  - c. Schedule IHS courses administered by the department.

**VI. Changes in the Governance Document**

Any voting members of the IHS EC, CC and AC, may submit a written proposal for a change in the governance document to the Director. Such proposals will be discussed and voted upon by the Executive Committee. Changes in the governance document that are approved by the EC will be approved by College Deans. In the event that this governance document is in conflict with a university policy and/or the ISU faculty handbook, the latter would prevail.

DRAFT

